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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of:	Brian C. Miller and Raymond C. Sturm
Serial Number:	10 / 071,354
Filed:	February 8, 2002
For:	**CHEMICALLY MODIFIED NONWOVEN ARTICLES AND METHOD FOR PRODUCING THE SAME**
Group Art Unit:	1771
Examiner:	Jenna Leigh Befumo

BRIEF ON APPEAL UNDER 37 CFR 1.192

Commissioner for Patents
PO Box 1450
Alexandria, Virginia 22313-1450

Sir:

Certificate of Mailing Under 37 CFR § 1.8

I hereby certify that this correspondence, and all correspondence referenced herein as being enclosed with this correspondence, is being deposited with the United States Postal Service in an envelope addressed to "Commissioner for Patents, PO Box 1450, Alexandria, Virginia 22313-1450" with sufficient postage on September 27, 2004.

Signature: Alissa Kohlman
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The following Appeal Brief is submitted pursuant to the Notice of Appeal filed on or about July 26, 2004, from the Final Office Action dated February 24, 2004.

I. REAL PARTY IN INTEREST

The above-referenced application is the subject of an assignment to Milliken & Company, located at 920 Milliken Road, Spartanburg, South Carolina, which is the real party in interest.

II. RELATED APPEALS & INTERFERENCES

Appellant is not aware of any other appeal or interference that will directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1, 5, 6, 8-10 and 12-29 have been rejected and are the subject of this Appeal.

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IV. STATUS OF AMENDMENTS

An amendment was filed after the Final Office Action. It was entered by the Office, according to the Advisory Action dated May 6, 2004.

V. SUMMARY OF THE INVENTION

The subject application is directed to a process for chemically modifying nonwoven textile articles to impart pilling resistance and soil release properties to the article without compromising the strength and abrasion resistance of the article.

Claim 1 is directed to a nonwoven textile article that has been chemically modified to achieve pilling resistance, soil release, strength, and abrasion resistance properties. The article is comprised of spun-bonded continuous multi-component fibers that are splittable along their length by mechanical or chemical action. The fibers may be polyester, nylon, or combinations thereof. The textile article may be a fabric that achieves a minimum pilling resistance rating of "B" when tested according to ASTM D4970 for Martindale Pilling and Marks & Spencer Test Method P17. The fabric also achieves a minimum soil release rating of 3.0 according to AATCC Method 130-2000 after 1 wash cycle. The features of claim 1 are described, for example, in the specification on page 4 (line 24) to page 5 (line 6) and in Examples 1-3 on pages 10 to15.

Claims 5 and 6, respectively, are directed to the fabric described in claim 1 wherein the fabric is dyed and wherein the fabric is undyed. The features of claims 5 and 6 are described, for example, in the specification on page 8, lines 10 to 12.

Claims 8 and 9, respectively, are directed to the fabric of claim 1 wherein the fabric exhibits increased wearer comfort and wherein the fabric retains its desired appearance, both due to a lack of pill formation. The features of claims 8 and 9 are described, for example, in the specification on page 3, lines 17 to 23.

Claim 10 is directed to the fabric of claim 1 wherein the fabric possesses extended useful life due to a lack of pill formation and increased wearer comfort and appearance retention. The features of claim 10 are described, for example, in the specification on page 3, lines 17 to 23.

Claim 12 is directed to the fabric of claim 1 wherein the fabric retains its desired appearance due to a lack of staining of the fabric. The features of claim 12 are described, for example, in the specification on page 3, line 25 to page 4, line 4.

Claim 13 is directed to the fabric of claim 1 wherein the fabric possesses extended useful life due to its desired appearance retention. The features of claim 13 are described, for example, in the specification on page 3, lines 17 to 23.

Claims 14 is directed to the fabric of claim 1 wherein the fabric achieves a minimum soil release rating of 3.5 according to AATCC Method 130-2000 after 5 wash cycles. The features of claim 14 are described, for example, in the specification on page 10 (see Example 1 and Table 1) and on page 11 and 12 (see Example 2 and Table 2).

Claim 15 is directed to the fabric of claim 14 wherein the fabric retains its desired appearance due to a lack of staining of the fabric. The features of claim 15 are described, for example, in the specification on page 3, line 25 to page 4, line 4.

Claim 16 is directed to the fabric of claim 14 wherein the fabric possesses extended useful life due to its desired appearance retention. The features of claim 16 are described, for example, in the specification on page 3, lines 17 to 23.

Claims 17-21, respectively, are directed to the fabric of claim 1 wherein the fabric achieves a minimum strength rating of 2.0 pounds according to ASTM D1424 for Elmendorf Tear, a minimum strength rating of 8.0 pounds according to ASTM D5587 for Trap Tear, a minimum strength rating of 70 pounds according to ASTM D5034 for Grab Tensile, a minimum abrasion resistance rating of 520 cycles to failure according to ASTM D3886 for Stoll Flat, and a minimum abrasion resistance rating of 14,750 cycles to failure according to ASTM D3885 for Flex Abrasion. The features of claims 17-21 are described, for example, in the specification on pages 12 to 14 (see Example 3 and Table 3).

Claims 22-29, respectively, are directed to the fabric of claim 1 wherein the fabric is incorporated into an article of apparel, bedding, residential upholstery, commercial upholstery, automotive upholstery, napery, residential cleaning, and commercial cleaning. The features of claims 22-29 are described, for example, in the specification on page 15, lines 10 to14.

VI. ISSUES

At issue in the present Appeal are:

(A) Whether Claims 1, 5-6, 8-10 and 12-29 are properly rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 21 and 42 of copending Application No. 10/071,297.

(B) Whether Claims 1, 5-6, 8-10 and 12-29 are properly rejected under 35 USC Section 102(b) as being anticipated by, or in the alternative, under 35 USC Section 103(a), as obvious over Groten et al. (US Patent No. 5,899,785).

(C) Whether Claims 1, 5-6, 8-10 and 12-29 are properly rejected under 35 USC 103(a) as being unpatentable over Vigo et al. (US Patent No. 5,897,952) in view of Groten et al.

VII. GROUPING OF CLAIMS

Appellant respectfully submits that all of the claims stand or fall together.

VIII. ARGUMENT

A. Whether Claims 1, 5-6, 8-10 and 12-29 are properly rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 21 and 42 of copending Application No. 10/071,297.

The Office has rejected Claims 1, 5-6, 8-10 and 12-29 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 21 and 42 of copending Application No. 10/071,297. The Office states that although the conflicting claims are not identical, they are not patentably distinct from each other because the scope of the claims encompasses the scope of the products recited in claim 21 and 42 of Application No. 10/071,297.

Appellant has stated, in the Amendment and Response filed on December 23, 2003 that it is willing to file a terminal disclaimer with regard to copending Application No. 10/071,297 once all other issues of patentability have been resolved. The Office acknowledged this willingness in the Final Office Action dated February 24, 2004.

B. Whether Claims 1, 5-6, 8-10 and 12-29 are properly rejected under 35 USC Section 102(b) as being anticipated by, or in the alternative, under 35 USC Section 103(a), as obvious over Groten et al.

Claims 1, 5-6, 8-10 and 12-29 are rejected under 35 USC Section 102(b) as being anticipated by, or in the alternative, under 35 USC Section 103(a), as obvious over Groten et al.

The Office's argument with respect to this rejection is as follows:

> "Although Groten et al. do not explicitly teach the limitations of pilling resistance, wearer comfort, life of fabric, appearance retention, soil release, lack of staining, strength, and abrasion resistance, it is reasonable to presume that said limitations are inherent to the invention. Support for said presumption is found in the use of similar materials (i.e. spun-bonded continuous nonwoven fabric, polyester and polyamide) and in the similar production steps (i.e. chemically treating the fabric to achieve soil release and pilling resistance) used to produce the finished fabric. The burden is upon the Applicant to prove otherwise. In the alternative, the claimed limitations would obviously have been provided by the process disclosed by Groten et al." (See Office Action dated 9/26/03, page 5).

> "The Applicant has failed to show that the products taught by the prior art would not inherently have the claimed properties. The Applicant argues that Groten et al. is similar to the untreated fabric shown in the examples. However, Groten et al. is not considered to be just an untreated fabric as shown in the examples because Groten et al. teaches explicitly that the fabric can be treated with anti-pilling treatments and dyeing chemical treatments. Thus, Groten et al. does not just teach an untreated fabric. Therefore, Groten et al. is not comparable to the untreated fabric in the examples and the rejection based on Groten et al. is maintained." (See Advisory Action dated 5/6/04).

Appellant respectfully disagrees and submits that the fabric of Groten et al. is indeed the fabric that is chemically modified by the chemical treatment of the current invention. In this regard, the specification clearly states:

> "For example, U.S. Patent Nos. # 5,899,785 and 5,970,583, both assigned to Freudenberg, describe a nonwoven lap of very fine continuous filament and the process for making such nonwoven lap using traditional nonwoven manufacturing techniques." (See specification, page 1, lines 15-17).
>
> "One such product manufactured and made available by Freudenberg according to these processes is known as Evolon®, and it is available in standard or point bonded variations." (See specification, page 1, lines 22-24).
>
> "U.S. Patent Nos. #5,899,785 and 5,970,583, both incorporated herein by reference, describe the composition and process for manufacturing the nonwoven lap that is the basis for the nonwoven textile article that is chemically modified by the current invention." (See specification, page 4, line 25, to page 5, line 1).
>
> "The following example shows treatment of the nonwoven fabric with the chemical mixture of the current invention in a laboratory setting. The fabric utilized here was 100 g/m^2 point bonded Evolon®." (See specification, page 10, lines 7-9).

Thus, Appellant respectfully submits it has clearly demonstrated that the untreated control fabric of the Examples is the fabric described in Groten et al. As a result, Appellant further submits that the claim limitations are not inherent to the untreated fabric of Groten et al., since Appellant has proven otherwise, as shown by the test results presented in Table 1 (pilling and soil release) and Table 3 (abrasion resistance). The test results clearly illustrate that Appellant's chemically modified fabric ("Treated") achieves greater pilling resistance, soil release, and abrasion resistance that the untreated fabric.

Furthermore, Appellant believes the claims are not anticipated by, or obvious in light of, Groten et al. since the reference specifically fails to teach each and every limitation of Appellant's claimed invention. Specifically, Groten et al. fails to teach soil release durability that is maintained and/or exhibited after exposure to laundering processes, as claimed by Appellant.

Appellant submits that the test results in Table 1 clearly show that the fabric of Groten et al. ("Untreated") does not achieve the same soil release rating after 1 wash cycle ("0/1") when compared with the treated fabric of the current invention. Additionally, the test results shown in Table 3 also illustrate that the untreated fabric of Groten et al. ("Control") does not achieve the same abrasion resistance after laundering, when compared with the treated fabric of the current invention.

Finally, while Groten et al. discloses that the nonwoven lap may be subjected to a "finishing treatment of a chemical nature, such as anti-pilling, hydrophilic treatment, or antistatic treatment" (col. 5, lines 2-5), Groten et al. fails to teach, in any of the provided examples, specific chemicals or combination of chemicals that may be employed to achieve such finishing treatments. The Office acknowledges this lack of teaching on page 4 of the Office Action dated 2/24/04.

Accordingly, Appellant respectfully asserts that the Office's rejection of Claims 1, 5-6, 8-10 and 12-29 under 35 USC Section 102(b), or in the alternative, under 35 USC Section 103(a), is improper and respectfully requests that this rejection be reversed.

C. Whether Claims 1, 5-6, 8-10 and 12-29 are properly rejected under 35 USC 103(a) as being unpatentable over Vigo et al. in view of Groten et al.

Claims 1, 5-6, 8-10 and 12-29 are rejected under 35 USC Section 103(a) as being unpatentable over Vigo et al. in view of Groten et al.

Groten et al. is directed to a spun-bonded nonwoven fabric formed from multi-component continuous filaments that may be at least partially split into individual components.

Vigo et al. is directed to fibers having a chemical treatment which provides improved thermal adaptability to the fibers (see Title and Abstract).

The Office's argument with respect to this rejection is as follows:

"Vigo et al. discloses a chemical treatment which produces a fabric comprising soil release, durable press, resistance to static charge, abrasion resistance, pilling resistance, and water absorbency (Abstract). The chemical treatment can be applied to all types of fibrous constructions including nonwoven fabrics (col. 1, lines 60-65). Thus, the treated nonwoven fabric would achieve some degree of abrasion resistance, pilling resistance, soil release, and strength." (See Office Action dated 9/26/03, page 4).

"Groten et al. is drawn to a spun-bonded nonwoven fabric which can be chemically treated. Groten et al. teaches that the nonwoven fabric has characteristics and properties that are at least equal to woven and knit fabrics, while being produced by techniques which are clearly more efficient and less costly. Therefore, it would have been obvious to one of ordinary skill in the art to use the fabric taught by Groten et al. with the chemical treatment taught by Vigo et al. since Groten et al. teaches that the nonwoven fabric has properties of woven and knit fabric while being less expensive and Vigo et al. teaches that the chemical treatment can be applied to various fabrics and fiber types. Thus, claims 2-6 were rejected. Claims 22-29 were rejected since the Examiner submits that claims 22-29 only recite the intended use of the fabric and fail to add further structural limitations to the fabric." (See Office Action dated 9/26/03, page 5-6).

"Although the limitations of pilling resistance, wearer comfort, life of fabric, appearance retention, soil release, lack of staining, strength, and abrasion resistance are not explicitly taught by Vigo et al. or Groten et al., it is reasonable to presume that said limitations would be met by the combination of the two references. Support for said presumption is found in the use of similar materials (i.e. a spun-bonded continuous nonwoven fabric, polyester and polyamide) and in the similar production steps (i.e. chemically treating the fabric to achieve soil release, pilling resistance, abrasion resistance and strength) used to produce the treated fabric. The burden is upon the Applicant to prove otherwise. Thus, claims 7-21 are rejected." (See Office Action dated 9/26/03, page 6).

"The rejection based on Vigo et al. in view of Groten et al. produces a nonwoven product treated with the chemical composition in Vigo et al. Thus, the fabric would definitely not be comparable to the untreated fabric in the examples. Therefore, the Applicant has

provided no evidence to show that the combination of the references would not produce the claimed properties. Therefore, the rejection based on Vigo et al. in view of Groten et al. is maintained." (See Advisory Action dated 5/6/04).

Appellant respectfully contends that the rejection of claims 1, 5-6, 8-10 and 12-29 is improper because the rejection lacks a *prima facie* showing of obviousness. More specifically, Appellant contends that there is no motivation or suggestion for combining the references to create the nonwoven fabric of Appellant's invention.

While Groten et al. is drawn to a spun-bonded nonwoven fabric formed from multi-component continuous filaments that may be at least partially split into individual components, Appellant respectfully submits that Vigo et al. teaches a chemical treatment that is far different from that taught by Appellant. Vigo et al. teaches a chemical treatment that provides a material having "improved thermal adaptability, i.e., the ability to release heat when the temperature drops and absorb heat when the temperature rises" (col. 3, lines 28-30). Vigo et al. recognized a need for a material capable of temperature adaptability (the problem to be solved) and created a chemical treatment comprised of polyethylene glycol, sulfonic acid, and glyoxal reactants to fill this recognized need (the solution to the problem). In contrast, Appellant's chemical treatment for pilling resistance, soil release, strength, and abrasion resistance properties includes, for example, components such as fluorocarbon, high density polyethylene, long chain alcohol, and silicone – components which are not taught or suggested by Vigo et al.

Thus, while Vigo et al. indeed discloses that "the material also possesses improved properties relating to soil release, durable press, resistance to static charge, abrasion resistance, pilling resistance and water absorbency" (Abstract), it is Appellant's contention (1) that Vigo et al. fails to teach a similar approach for achieving these properties, i.e. Vigo et al. teaches far different chemistry for achieving the solution to the problem of achieving a temperature adaptable material and (2) that Vigo et al. fails to enable all of these improved characteristics of the material, i.e., Vigo et al. fails to provide any teaching relating to chemical compounds which specifically enhance, for instance, pilling resistance. Furthermore, Appellant believes that these improved characteristics are merely additional benefits gained by Vigo et al. during the problem/solution approach undertaken to create the temperature adaptable material.

Accordingly, Appellant respectfully contends that one of ordinary skill in the art would not look to the temperature adaptable chemistry of Vigo et al. combined with the multi-component spun-bonded nonwoven fabric of Groten et al. to create Appellant's spun-bonded nonwoven fabric having the combination of characteristics which include pilling resistance, soil release, strength, and abrasion resistance properties.

Accordingly, Appellant respectfully asserts that the Office's rejection of Claims 1, 5-6, 8-10 and 12-29 under 35 USC Section 103(a) is improper and respectfully requests that this rejection be reversed.

IX. CONCLUSION

For the reasons set forth above, Appellant respectfully urges that the rejections of Claims 1, 5-6, 8-10 and 12-29 are improper. Reversal of all rejections in this Appeal is hereby requested.

A copy of pending Claims 1, 5-6, 8-10 and 12-29 is attached as an appendix hereto.

The Commissioner is hereby authorized to charge the Appeal Brief fee of $330.00 to Deposit Account No. 04-0500. The Commissioner is also authorized to charge any additional fees that may be required, or credit any over-payment, to Deposit Account No. 04-0500. This Appeal Brief is being submitted in triplicate.

Respectfully submitted,

September 27, 2004

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CLAIMS

Claim 1 A nonwoven textile article that has been chemically modified to achieve pilling resistance, soil release, strength, and abrasion resistance properties, wherein the textile article is comprised of spun-bonded continuous multi-component fibers that are splittable along their length by mechanical or chemical action, and wherein said fibers are selected from the group consisting of polyester, nylon, and combinations thereof, and wherein the textile article is a fabric and said fabric achieves a minimum pilling resistance rating of "B" according to ASTM D4970 for Martindale Pilling and Marks & Spencer Test Method P17 and wherein said fabric further achieves a minimum soil release rating of 3.0 according to AATCC Method 130-2000 after 1 wash cycle.

Claims 2-4 (cancelled)

Claim 5 The textile article of claim 1, wherein the textile article is a fabric and said fabric is dyed.

Claim 6 The textile article of claim 1, wherein the textile article is a fabric and said fabric is undyed.

Claim 7 (cancelled)

Claim 8 The textile article of claim 1, wherein the textile article is a fabric and said fabric exhibits increased wearer comfort due to a lack of pill formation.

Claim 9 The textile article of claim 1, wherein the textile article is a fabric and said fabric retains its desired appearance due to a lack of pill formation.

Claim 10 The textile article of claim 1, wherein the textile article is a fabric and said fabric possesses extended useful life due to a lack of pill formation and increased wearer comfort and appearance retention.

Claim 11 (cancelled)

Claim 12 The textile article of claim 1, wherein the textile article is a fabric and said fabric retains its desired appearance due to a lack of staining of the fabric.

Claim 13 The textile article of claim 1, wherein the textile article is a fabric and said fabric possesses extended useful life due its desired appearance retention.

Claim 14 The textile article of claim 1, wherein the textile article is a fabric and said fabric achieves a minimum soil release rating of 3.5 according to AATCC Method 130-2000 after 5 wash cycles.

Claim 15 The textile article of claim 14, wherein the textile article is a fabric and said fabric retains its desired appearance due to a lack of staining of the fabric.

Claim 16 The textile article of claim 14, wherein the textile article is a fabric and said fabric possesses extended useful life due its desired appearance retention.

Claim 17 The textile article of claim 1, wherein the textile article is a fabric and said fabric achieves a minimum strength rating of 2.0 pounds according to ASTM D1424 for Elmendorf Tear.

Claim 18 The textile article of claim 1, wherein the textile article is a fabric and said fabric achieves a minimum strength rating of 8.0 pounds direction according to ASTM D5587 for Trap Tear.

Claim 19 The textile article of claim 1, wherein the textile article is a fabric and said fabric achieves a minimum strength rating of 70 pounds according to ASTM D5034 for Grab Tensile.

Claim 20 The textile article of claim 1, wherein the textile article is a fabric and said fabric achieves a minimum abrasion resistance rating of 520 cycles to failure according to ASTM D3886 for Stoll Flat.

Claim 21 The textile article of claim 1, wherein the textile article is a fabric and said fabric achieves a minimum abrasion resistance rating of 14,750 cycles to failure according to ASTM D3885 for Flex Abrasion.

Claim 22 The textile article of claim 1, wherein the textile article is a fabric and said fabric is incorporated into an article of apparel.

Claim 23 The textile article of claim 1, wherein the textile article is a fabric and said fabric is incorporated into an article of bedding.

Claim 24 The textile article of claim 1, wherein the textile article is a fabric and said fabric is incorporated into an article of residential upholstery.

Claim 25 The textile article of claim 1, wherein the textile article is a fabric and said fabric is incorporated into an article of commercial upholstery.

Claim 26 The textile article of claim 1, wherein the textile article is a fabric and said fabric is incorporated into an article of automotive upholstery.

Claim 27 The textile article of claim 1, wherein the textile article is a fabric and said fabric is incorporated into an article of napery.

Claim 28 The textile article of claim 1, wherein the textile article is a fabric and said fabric is incorporated into an article for residential cleaning.

Claim 29 The textile article of claim 1, wherein the textile article is a fabric and said fabric is incorporated into an article for commercial cleaning.